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EXAMINER

CHAO, ELMER M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. Acknowledgement is made of the amendment filed 12/4/2007.

Response to Arguments

2. Applicant's arguments with respect to claims 1-73 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10, 12-19, 21-27, 30-40, 42-50, 52-58, and 61-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the phrase "haptic object" is extremely vague and is not a common term used in the art. Examiner underwent extensive research reading through Applicants' invention and still only barely grasps the concept of a "haptic object". However, Examiner does believe that a "haptic object", as broadly used and described in the Applicants' Specification, is closest to a collection of data of a site of interest relating to the size, volume, dimensions, shape, location, and possibly texture of the site of interest and which is stored digitally on a computer medium to be useful for performing haptic assisted operations on the site of interest. Examiner requests Applicant to clearly define the term and concept behind a "haptic object" such that it cannot be mistaken or

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misinterpreted in the claims of the instant application. Using the word “object” as part of the phrase in question does not help since “objects” are generally understood to be physical tangible entities, except in the field of computer software and programming.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-7, 9, 10, 12-19, 32-38, 40, 42-48, 66, 67, 69, and 70** are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. (U.S. 5,950,629).

Regarding **claims 1-5, 9, 10, 12-14, and 17-19**, Taylor et al. teach a method for use of a computer-assisted surgery system during a medical procedure, comprising: receiving information on an anatomical target region of a patient (col. 20, line 22—col. 21, line 16); tracking the position of a surgical tool as the tool is moved by a surgeon in performing the medical procedure (col. 20, line 22—col. 21, line 16); determining a scalar distance between a current position of said tool and the anatomical target region (col. 13, lines 45 - 52); providing to the user of the surgical tool a visual indication of said scalar distance (col. 13, line 48), wherein the haptic object defined by mapping between a pose

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of the tool and an output wrench of the haptic device (col. 20, line 22 – col. 21, line 16; col. 13, line 45 – col. 14, line 4).

Taylor et al. teach the limitations as discussed above but fail to explicitly teach the surgery used for removing tissue. However, Taylor et al. do teach using cutting instruments with the haptic device (col. 18, lines 27-53). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Taylor et al. to remove tissue as it is a design choice that is performed by the necessity of a chosen surgical operation.

Regarding **claims 15 and 46**, Taylor et al. teach the step of using tactile feedback while positioning a surgical instrument (col. 8, lines 29-30).

Regarding **claims 16 and 47**, Taylor et al. teach providing a vibration as an indicator in order to assist the surgeon in position the surgical instrument (Taylor et al., col. 8, lines 30-31).

Regarding **claims 32-35, 40, 42-45, 48, 66, 67, and 70**, the system taught by Taylor et al. is fully capable of performing all the functional limitations recited in the claims.

6. Regarding **claims 6, 7, and 36-38**, Taylor et al. teach the limitations as discussed above but fail to explicitly teach the location of the display. However, providing the display with a haptics/tactile device is well known to those skilled in the art. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include integrating the display with a haptic device in order for the operator to easily watch the updated distance while

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controlling the tool. Furthermore, such a modification would be considered a step of making integral (see *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

7. **Claims 8 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. in view of Sumanaweera et al. (U.S. 6,443,894 B1). Taylor et al. teach the limitations as discussed above but fail to explicitly teach using color as a visual indicator. However, in the field of medical imaging, Sumanaweera et al. teach using color as a visual indicator (col. 13, lines 48-52). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to use color as a function of distance as the visual indicator in order to alert the user of the distance between the tool and the target (for motivation see (col. 13, lines 50-52, "color is assigned for different distances").

8. **Claims 21-24 25-27, 30, 31, 49, 50, 52-57, 58, 61-64, 68, 71, and 72** are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor et al. in view of Wodicka et al. (U.S. 5,445,144).

Regarding **claims 21, 22, 25-27, 30, 31, 49, 50, 52-54, 57, 58, 61-64, 68, 71, and 72**, Taylor et al. teach the limitations as discussed above but fail to explicitly teach an audio alert based on distance. However, in the field of medical positioning, Wodicka et al. teach using audio alerts based on distance (col. 14, lines 42-45). Therefore, it would have been obvious to a person of ordinary skill

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in the art at the time of the invention to use an audio alert in order to alert the user of a distance or position status of the tool (for motivation see col. 14, lines 42-45).

Regarding **claims 23, 24, and 55**, Taylor et al. and Wodicka et al. teach the limitations as discussed above but fail to explicitly teach the positioning of the audio alert system. However, providing the alert system as integrated with a haptics/tactile device is well known to those skilled in the art. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to include integrating the display with a haptic device in order for the operator to easily hear the updated distance while controlling the tool. Furthermore, such a modification would be considered a step of making integral (see *In re Larson*, 340 F.2d 965, 968, 144 USPQ 347, 349 (CCPA 1965)).

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory

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action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elmer Chao whose telephone number is (571)272-0674. The examiner can normally be reached on 9am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian L Casler/
Supervisory Patent Examiner, Art

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Unit 3737

/E. C./

Examiner, Art Unit 3737

5/19/2008